2017 Communications Meeting



Gas Safety Staff MPSC MPSC-Operations@michigan.gov **Michigan Public Service Commission**

- The MPSC is required to adopt Federal regulations within 24 months of the effective date.
- A State agency participating in the pipeline safety program under a certification is required to adopt Federal pipeline safety regulations or take steps to adopt such regulations. Adoption of applicable Federal regulations may be automatic, require State rulemaking actions, or necessitate State legislative action, and should be adopted within 24 months of the effective date or two general sessions of the State Legislature, whichever is longer. In addition, a State agency may issue additional or more stringent standards concerning intrastate pipelines as long as they are compatible with Federal regulations. Any interpretation of a regulation adopted by a State agency must not conflict with any opinion/interpretation issued by PHMSA.

Reference: Guidelines for States Participating in the Pipeline Safety Program, Section 3.1.

The MPSC Gas Safety Procedures state:

At the direction of the Program Manager, as necessary, the MGSS should be reviewed and revised approximately every 3 years. Review and revisions will be performed with the input of the Staff and will be intended to update the rules based upon changes to the industry, technology, Staff workload, updates to Part 192 or any other items that may necessitate such rule changes.

 Depending on the circumstances and the effective date of Federal Regulations, MGSS revisions may not be allowed to span three years between versions.

- How do new Federal Regulations get enforced if they are not incorporated into the MGSS?
- The State still has the ability to conduct inspections on new Federal Regulations, regardless of whether or not they are incorporated into the MGSS.
- However, any enforcement actions would be required to be issued from PHMSA. In such cases, the State would submit violation reports to PHMSA, and PHMSA would issue the appropriate enforcement directly to the operator.
 - This is a similar process to how the State interacts with PHMSA on interstate operators.

- The below website lists the LARA pending rulemakings.
 - http://w3.lara.state.mi.us/orr/Rules.aspx?type=dept&id=LR



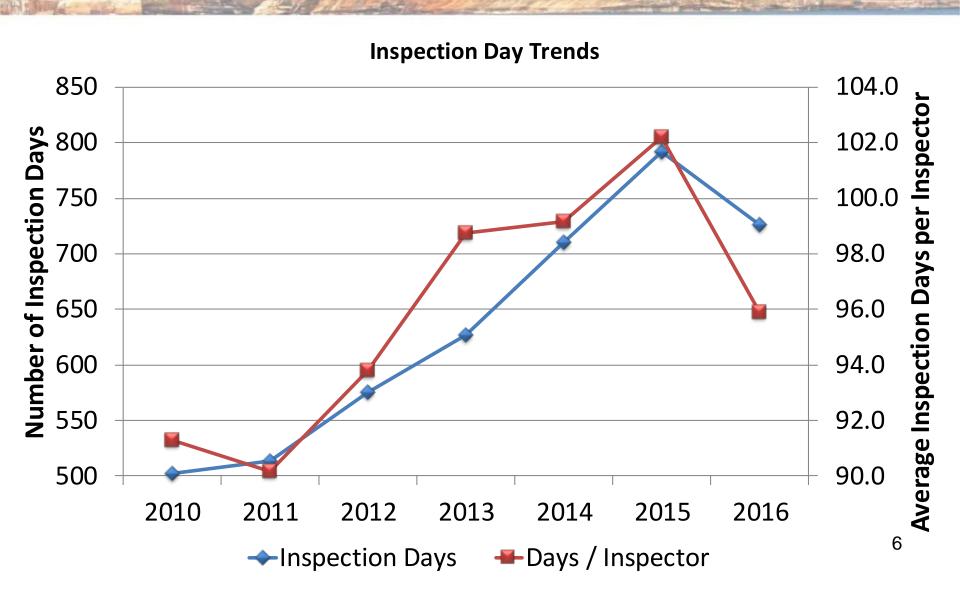
2016-057 LR

Michigan Gas Safety Standards

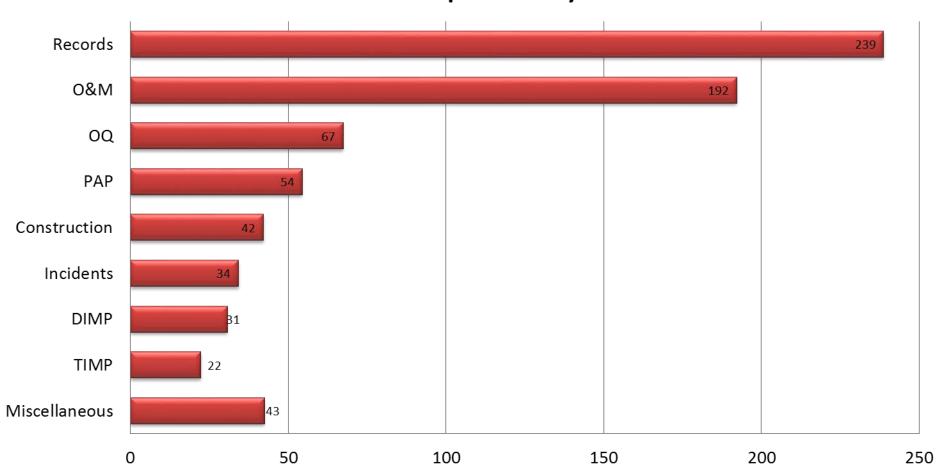
(Licensing and Regulatory Affairs, Public Service Commission)

In order for Michigan to maintain jurisdiction over gas pipeline facilities and transportation, the state must certify that it has adopted each applicable federal standard, or is taking steps to adopt that standard, 49 USC 60105(b)(2). Failure to adopt the updates to the federal standards will eventually lead to reduction or termination of federal funding to the state to carry out enforcement of these standards. In addition, failure to maintain local jurisdiction over pipeline regulation will mean that pipelines located in Michigan will be forced to submit to federal regulators located in Washington D.C. or other out-of-state locations. Thus, the primary purpose of these amendments is to adopt by reference current federal regulations governing gas safety along with updating certain other technical standards contained in the rules. The proposed amendments may also make minor changes to Michigan rules so that the language in these rules conforms more closely to the federal rules.

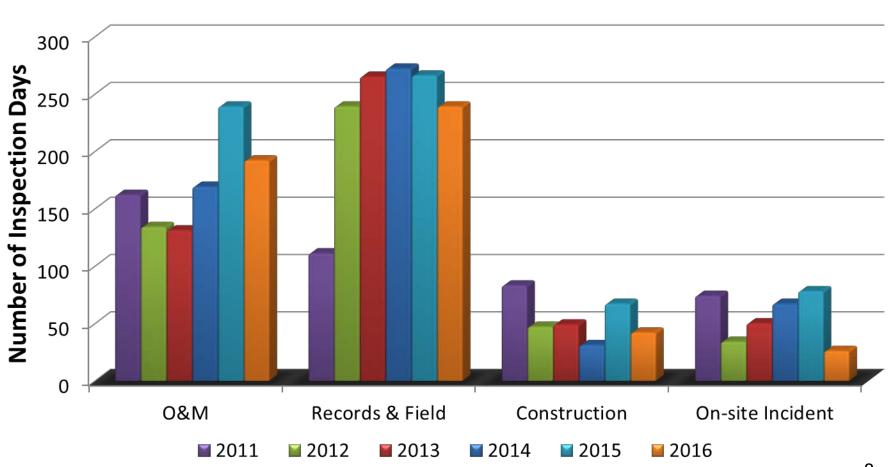
- Rules Process in a Nutshell
 - https://www.michigan.gov/documents/lara/Admin_Rules_Proces s_353271_7.pdf



2016 Inspection Days

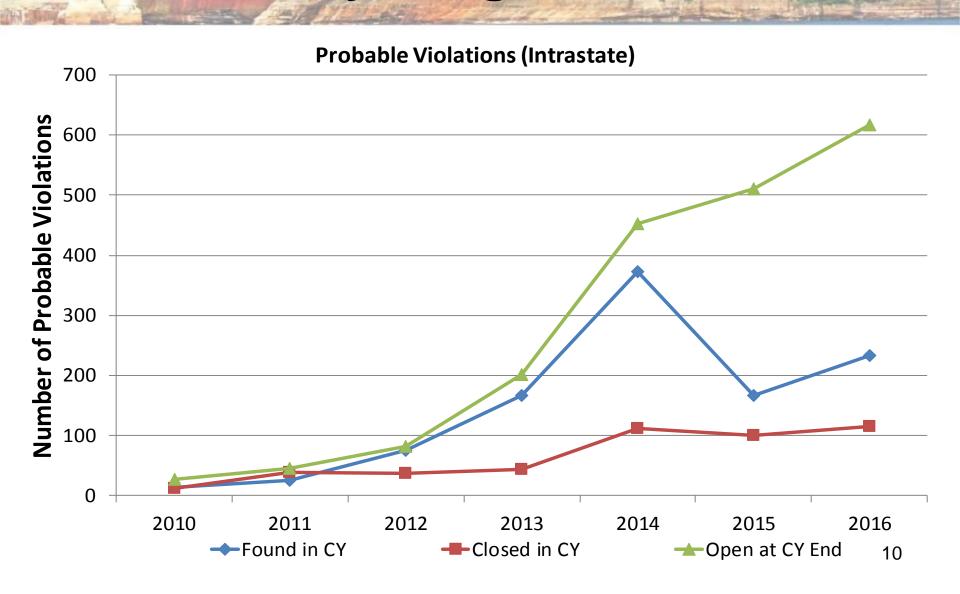


Inspection Day Activity

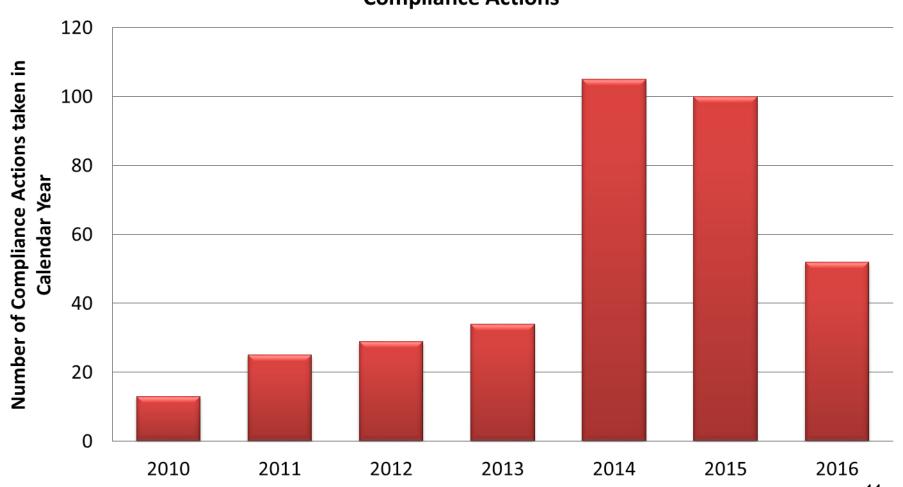


Required Field Inspections

- PHMSA requires the following specifics for each unit per inspection cycle (every 4-years).
 - CP Reads
 - Valve Inspections
 - Odorization Equipment
 - Regulation Equipment
 - Leaks
 - Emergency Response
- These requirements will likely not impose a greater burden on the operators, but rather MPSC internal documentation.





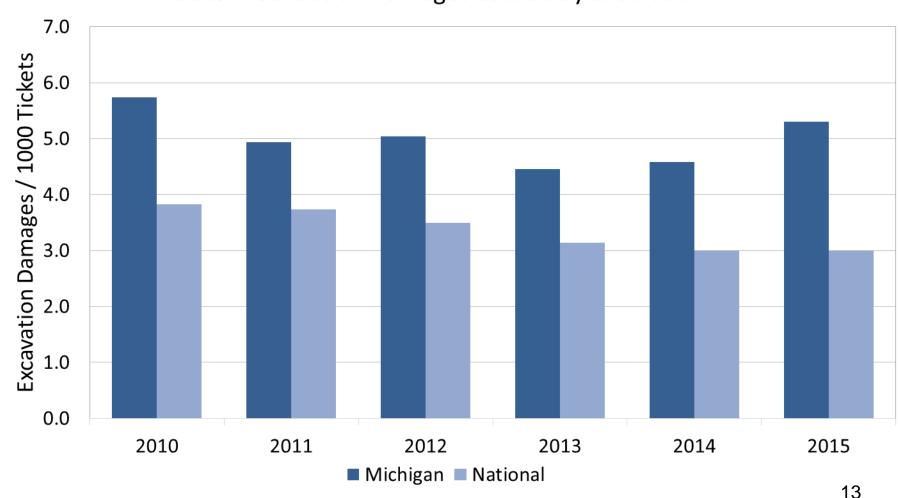


2015 Distribution Pipeline Excavation Damage Summary

Michigan	
Excavation Damages	4,256
Excavation Tickets	796,641
Excavation Damages / 1000 Tickets	5.3

National	
Excavation Damages / 1000 Tickets	3.0





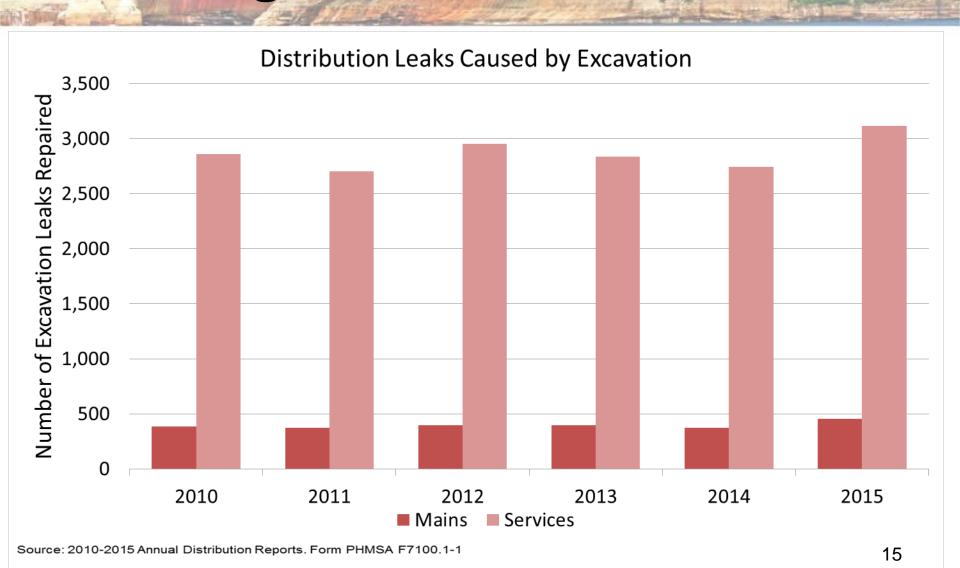
Source: 2010-2015 Annual Distribution Reports. Form PHMSA F7100.1-1

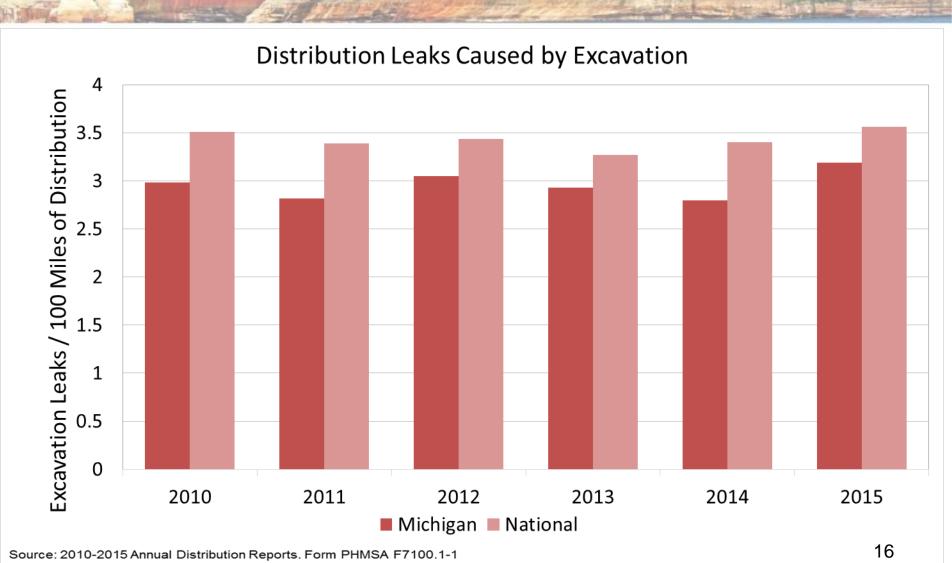
2015 Distribution Pipeline Excavation Leak Summary

Mains	
Excavation Leaks	457
Leaks / 100 Miles of Main	0.79

Services	
Excavation Leaks	3115
Leaks / 1000 Services	0.95

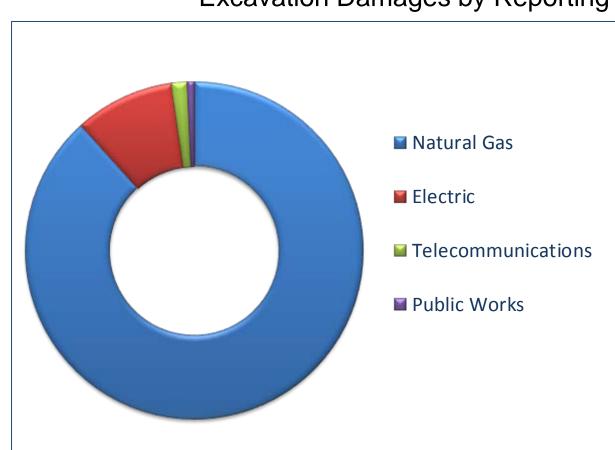
Source: 2010-2015 Annual Distribution Reports. Form PHMSA F7100.1-1





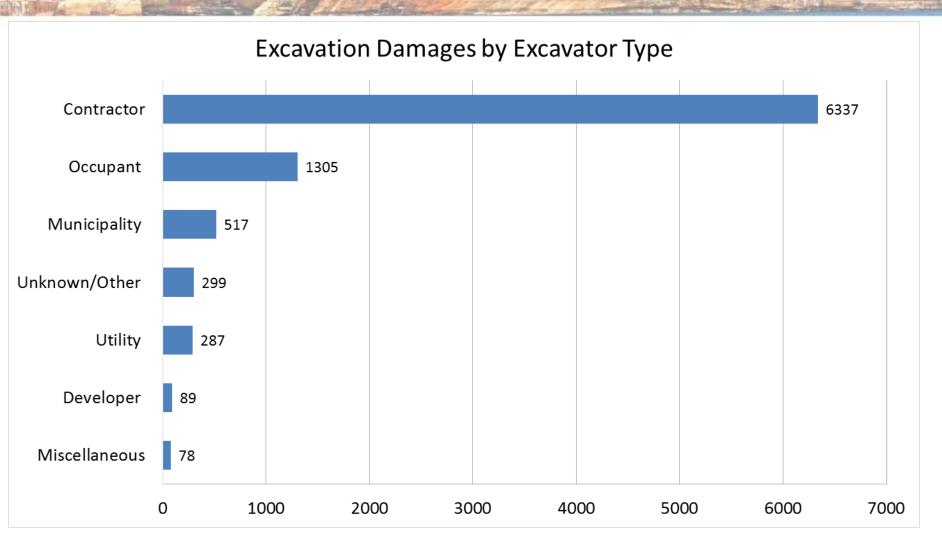
- 8983 damage incidents reported
 - 39% of damages reported that there was no MISS DIG notification.
 - 9 damages reported that there were exemptions under Act 174 for facility marking.
 - 58% of hand tool damages reported had no MISS DIG notification.

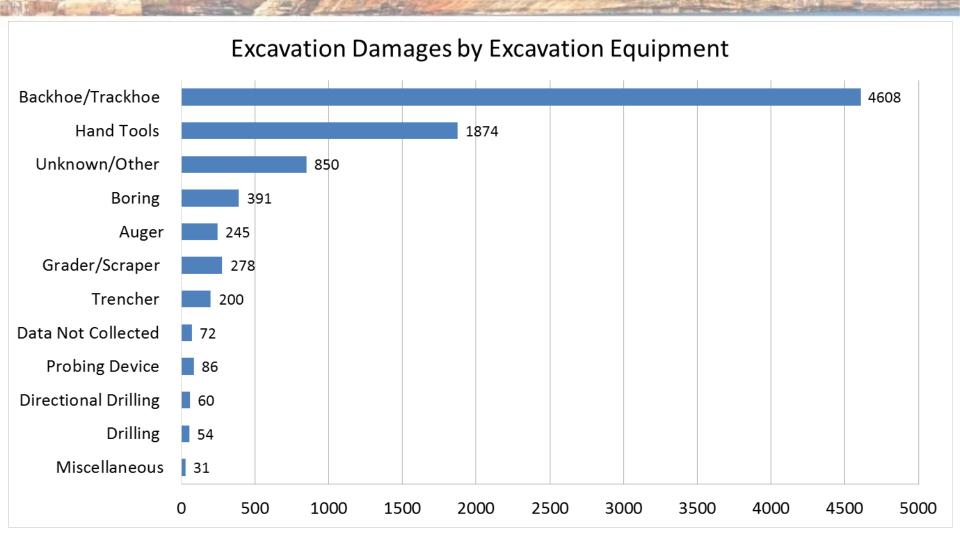
Excavation Damages by Reporting Industry

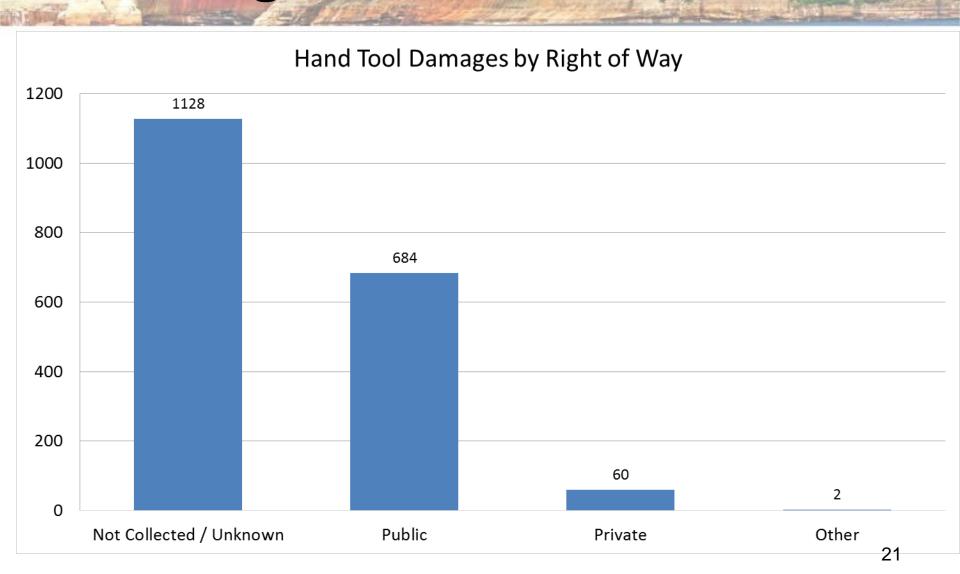


Disproportionate industry reporting is evident

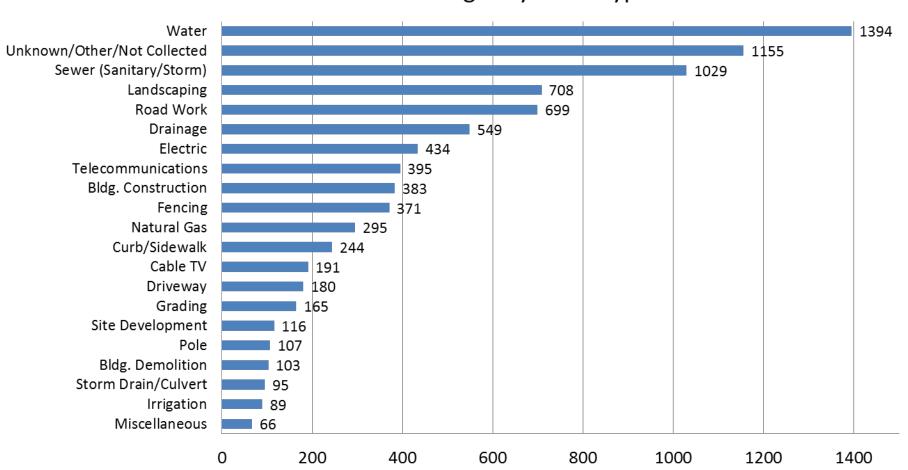
- •Over 90% of natural gas distribution customers are accounted for in reports received.
- •Less than 50% of electric distribution customers are accounted for in reports received.
- •Reporting for major utility operators for other industries is lacking.



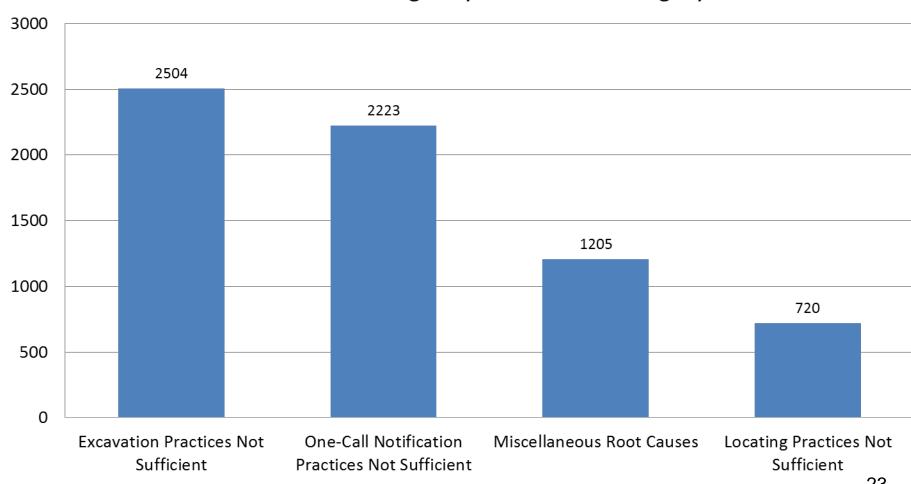


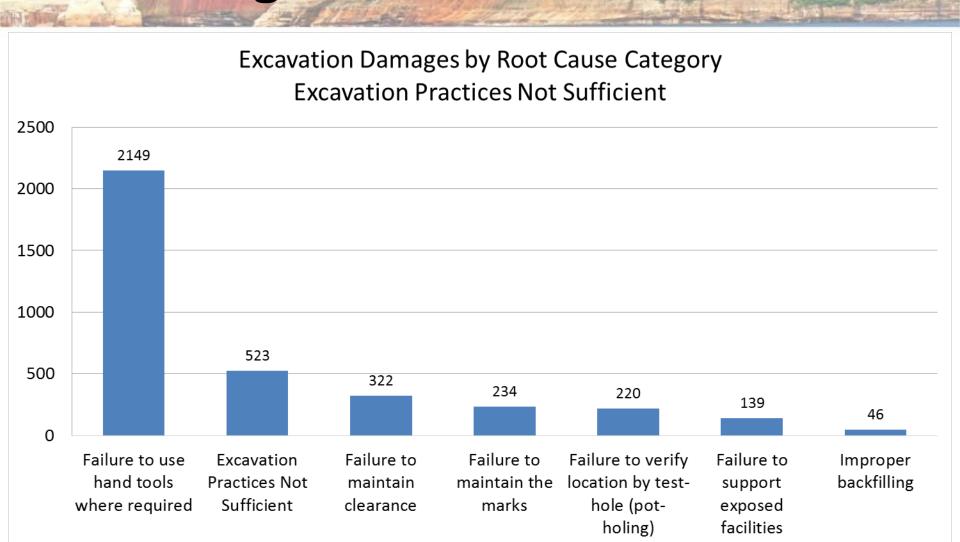


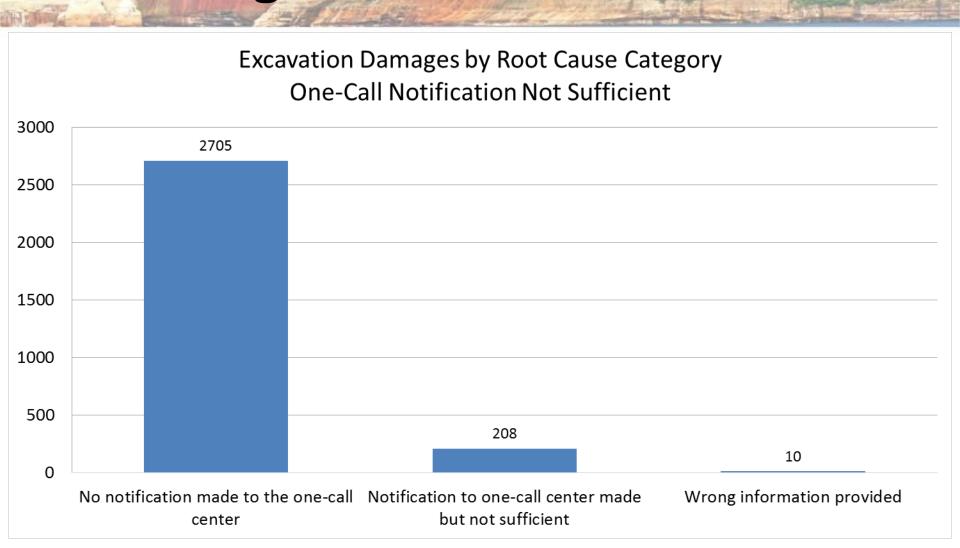
Excavation Damages by Work Type

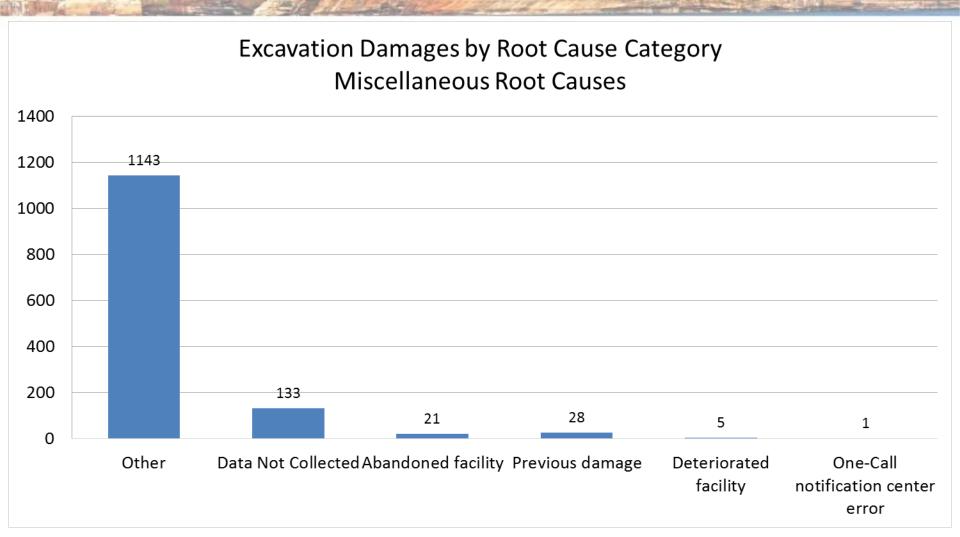


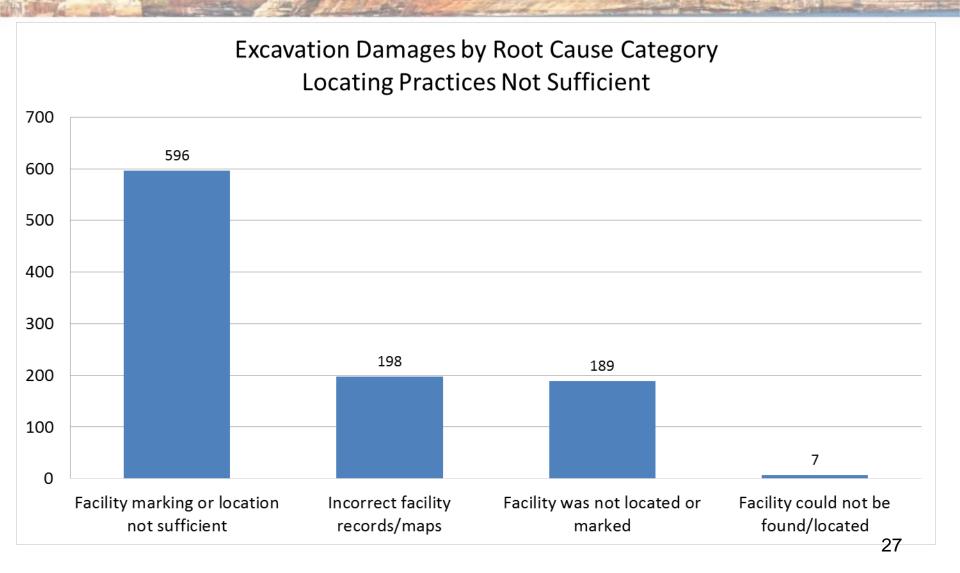
Excavation Damages by Root Cause Category













Jeff Quirante

Public Act 174 - Damage Prevention

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Act 174 Rules Adopted

MISS DIG Underground Facility Damage Prevention and Safety Act, Act 174 of 2013 (Act 174), MCL 460.721 et seq.

- On December 12, 2016, JCAR did not take any action to prevent the rules from being transmitted to the Secretary of State, and waived the remaining session days. The Commission therefore had the authority to formally adopt these rules.
- On December 20, 2016, The MPSC issued an order to formally adopt rules governing underground facility damage prevention and safety, as required by Public Act 174 of 2013, known as the MISS DIG Act.

Investigation Process

Investigation Process

- Both parties are contacted (facility owner/operator and excavator) and requested to submit evidence.
- Evidence typically reviewed:
 - Review MISS DIG ticket(s).
 - Confirm if excavator used soft excavation within caution zone (48" on each side of marking).
 - Confirm marking accuracy.
 - Review operator's maps/records for accuracy.
 - Review photographs.
 - Review reports and field notes documenting the incident.

Damage Prevention Complaints

- Damage prevention complaint form is available at http://michigan.gov/mpsc
- 79 complaints filed since Act 174 became effective on April 1, 2014.
 - 23 complaints filed in 2016
 - 4 complaints filed in 2017
- 27 complaints warranted investigation under Act 174.

Significant Non-Compliances

Originating from a complaint and resulting in a fine:

- MCL 460.725(1): Excavator not providing a dig notice at least 72 hours in advance of excavation.
 - Most of the violations were due to lack of knowledge of Act 174.
- MCL 460.725(5): Excavator did not use soft excavation at intervals reasonably necessary to establish the precise location of facility.
 - Excavator failed to establish precise location of a facility in a caution zone while crossing a marked facility.

Significant Non-Compliances

Originating from a complaint and resulting in a fine:

- MCL 460.725(9): Excavator did not provide immediate notice and stop digging when the facility did not post a positive response.
 - Excavator failed to check positive response and failed to stop excavation in the immediate vicinity of an unmarked facility due to lack of a positive response.
- MCL 460.727(5): Facility owner/operator failed to provide additional assistance to an excavator within three hours.
 - Facility operator did not provide additional assistance to an excavator.

Excavation Damage Incidents

Reported under the Gas Safety Standards Rule 460.20503

- Damages reported under R 460.20503 since April 1, 2014, are subject to investigation for violations of Act 174.
- Numerous damage cases have been investigated and closed with letters sent to the damaging party informing them of a probable violation.
- Incidents involving damage are being actively investigated as they are received.

Significant Non-Compliances

Third-party and first-party damages:

- MCL 460.725(1): Excavator not providing a dig notice at least 72 hours in advance of excavation.
 - Failure to provide a notification to MISS DIG.
 - Excavating outside the scope of MISS DIG ticket.
- MCL 460.725(5): Excavator did not use soft excavation at intervals reasonably necessary to establish the precise location of facility.
 - Excavator failed to use soft excavation at intervals as often as reasonably necessary while working parallel to marked facility.
- MCL 460.725(6): Excavator not providing support or bracing of facilities or excavation walls in an excavation or blasting area that are reasonably necessary for the protection of facilities.
 - Excavator failed to provide the necessary support or bracing of excavation walls for protection of the marked facility.

Significant Non-Compliances

Third-party and first-party damages:

- MCL 460.725(9): Excavator not providing immediate additional notice and stopping excavation in the vicinity of an unmarked facility due to lack of positive response.
 - Excavator provided notice but failed to stop excavating prior to receiving additional assistance.
- MCL 460.727(1): Operator not responding to a ticket by the start date and time of the excavation; not marking facilities in the area of proposed excavation or blasting in a manner that permits the excavator to employ soft excavation to establish the precise location of the facilities.
 - Failure to mark facilities prior to dig start date.
 - Marking is off by greater than 48".

Non-Compliances

- To date, non-compliance letters assessing a civil fine have only been issued for complaint cases.
- Currently we are tracking the third-party damage cases, when multiple offenses of Act 174 have occurred, civil fines will likely be assessed for third-party and first-party damage cases.

PHMSA Audit

- June 14, 2016, the Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) conducted an adequacy evaluation of Michigan's enforcement of it's damage prevention law, Act 174.
- December 28, 2016, the MPSC received the letter from PHMSA with a determination that the enforcement of Michigan's damage prevention law is ADEQUATE.



Tayler Becker

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- Transmission line damage during construction of parallel line.
- Two contractor crews called in one-call tickets.
- Neither ticket covered the scope of the damage area.
- 10" Steel, 0.250 wall, X-42, ERW, 976 psig MAOP.
- No fatalities, injuries, or release of gas.





- 192.201(a)(2)(i): Failure to set relief valve to account for buildup as outlined in Manufacturer's Bulletin.
- 192.383(c): Failure to report all EFV installations due to GIS mapping backlog issues.
- 192.479(a): Failure to recoat pipe when the initial coating has deteriorated and not coating above-grade steel.





- 192.481(a): Failure to provide atmospheric corrosion inspection documentation for below-grade valves in structures, station piping, and inside meters.
- 192.481(b): Failure to identify deteriorated coating and take corrective action at pipeline soil-to-air interfaces.



 192.603(b): Failure to appropriately document inspection of Kixcel (pilot drive actuator) pressure regulating equipment.



- 192.605(a): Failure to prepare and follow procedures.
 - Failure to prepare regulating station or atmospheric corrosion inspection procedures.
 - Failure to follow leak investigation procedures.
- 192.614(a): Failure to prepare a written damage prevention program and failing to follow a damage prevention program.
 - Failure to mark the entire scope of one-call tickets.
 - Failure to respond to a one-call ticket within three days.
- 192.614(c)(1): Failure to include local excavators or excavators who have damaged operator's facilities in the excavator mailing list.
- 192.616(c): Failure to follow supplemental requirements of API RP 1162.

- 192.731(a): Failure to inspect each relief valve within a compressor station. Only those protecting MAOP were inspected.
- 192.739(a): Failure to inspect regulating stations.
 - Failure to inspect farm tap-type stations serving three customers.
 - Failure to inspect regulating stations due to accessibility.
- R 460.20501(2)(a): Failure to maintain records showing the location of service lines.



Heather David

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Central Michigan; Construction

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First event:

- Regulator failure causing
 4.2 MMCF gas to vent from relief.
- Fisher EZR regulator had a damaged filter screen and diaphragm.
- Regulator overhauled and placed back into service.
- Regulator was also overhauled one week prior because of a defect identified in the cage during an inspection.





- Second event (following day):
 - Regulator and relief failure caused one mile of transmission line to experience exceedance of MAOP plus 13%.
 - Fisher EZR regulator filter screen deformed and diaphragm damaged again (one day in service).
 - Regulator taken out of service.
 - Hydrates precipitated out of the gas stream and froze in the relief valve resulting in delayed activation.



- Operator's Lab Analysis Summary:
 - Both damaged diaphragms were out of position (unknown why).
 - Diaphragm dimensions were inconsistent with the dimensions of the cage, preventing a secure fit during assembly.
 - Measurement data indicates the O-ring assembled on the bonnet was not subject to compression during assembly.







- Leak on 12" transmission line found during leak survey.
 - Day 1: Third-party leak survey finds leak. Operator pinpoints leak.
 - Day 2: Pressure reduction to 345 psig (400 psig MAOP). 17' depth.
 - Day 6: Leak determined to be loose bolts on lid of Mueller pressure control fitting (2010 install). Determined to be SRC.
 - Day 8: Reported to MPSC. Leak repaired by installing new gaskets, cleaning flanges, and tightening bolts.
 - Day 22: Reported to PHMSA. Damages \$76,558.
- Operator continuously monitored leak until repair was made.



- Third-party damage on four-inch plastic main operating at 60 psig MAOP.
- Reported to MPSC 7.5 hours after damage occurred, preventing Staff from seeing repairs.
- Gas loss calculation error resulted in late reporting to MPSC and PHMSA.
 - Preliminary field gas lost calculation < 1 MMcf.
 - MPSC notified when recalculation shows 5 MMcf.
 - Original 30-day report shows 5 MMcf.
 - Supplemental/Final 30-day report shows
 .736 MMcf.
- 10 residents and 7 businesses evacuated.

- Staking accuracy under review:
 - Operator indicates excavator failed to hand locate.
 - Operator indicates excavator dug prior to re-stake request due date, before facilities were re-staked.
 - Excavator indicates that Operator remarked the site during ongoing onsite actives, but markings were incomplete.

What does the Evidence show?



- 192.195(a): Failure to have pressure relieving or pressure limiting devices on a transmission pipeline where the MAOP could be exceeded. (12 psig difference).
- 192.479(a): Failure to clean and coat a newly installed regulator station exposed to the atmosphere for over two years.
- 192.479(b): Failure to use coating material suitable for the prevention of atmospheric corrosion (spray foam).
- 192.481(a): Failure to perform atmospheric corrosion inspections on exposed stainless steel installations.





- 192.605(a): Failure to prepare and follow O&M procedures.
 - Lack of adequate procedures for confirming set pressure and lockup pressure for regulators.
 - Failure to follow leak investigation procedures and classify.
- PA 174: Distribution crew failed to use soft excavation to expose a gas service when the bore head entered the caution zone (48" from facility markings).



- 192.615(b)(3): Failure to review employee activities to determine whether the procedures were effectively followed in each emergency.
- 192.707(d)(2): Failure to have name of the operator and telephone number on each line marker at river crossings.
- 192.739(a)(3): Failure to determine that each pressure regulating station and its equipment are set to control at the correct pressure at intervals not exceeding 15 months.
 - Shaffer Actuator Valves (OPP).
 - Working monitor regulators with two pilots.
 - Regulators on auxiliary run, single fed system with low feed.

 192.749(d): Failure to assure that each vault cover does not present a hazard to public safety. Vault inspection records indicated that the vault cover needed repair during the 2010, 2011, 2012, 2013, and 2014 annual inspections.





Kyle Friske

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TIMP; DIMP

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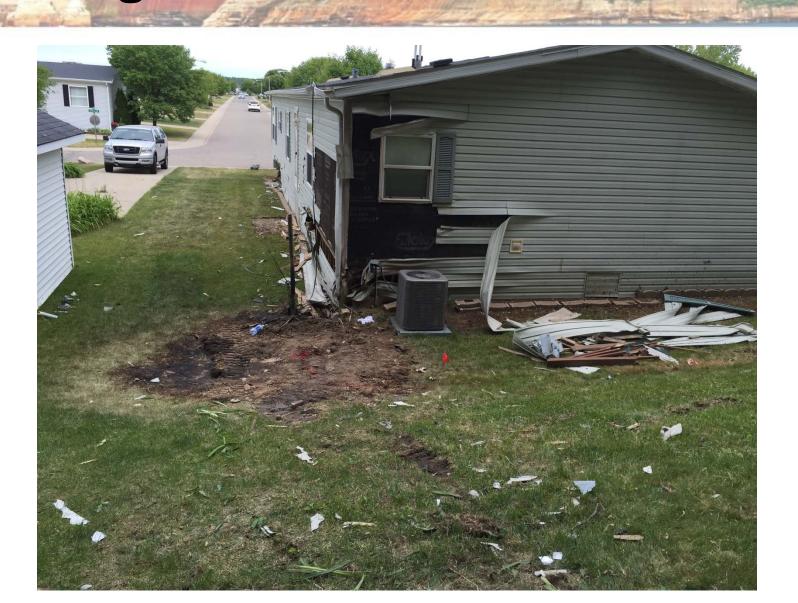
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- Vehicle exits the road and strikes a pedestal containing both gas and electric meters.
- Escaping gas ignited causing damage to a home.
- One injury.
- Drugs/alcohol suspected to be involved.
- Driver did not apply brakes before or after meter was hit and the vehicle proceeded past the house and into woods.
- \$19,301 damages.

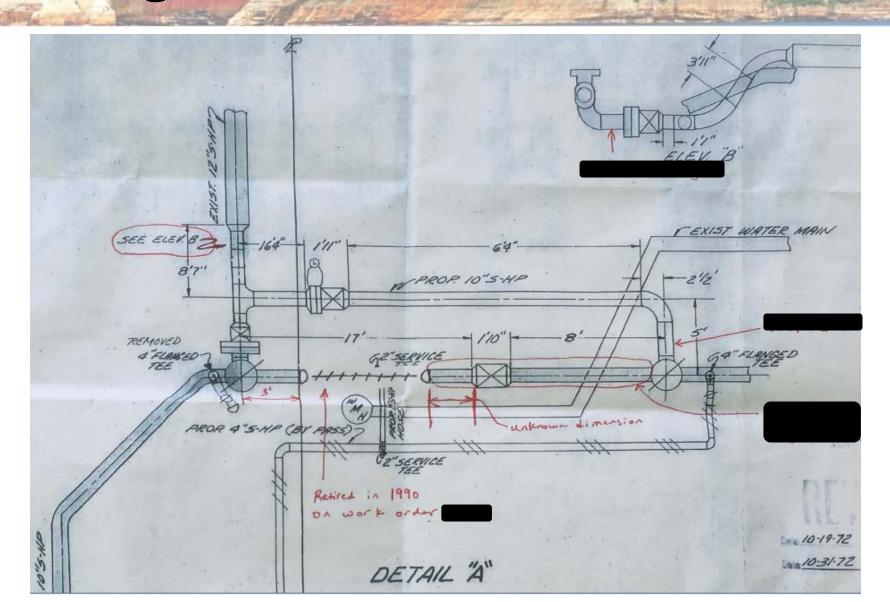






- Second-party damage during integrity dig.
- Four-inch welded tee on ten-inch pipeline was hit by excavator and cracked.
- Gas blew over 24 hours.
- Isolated via Mueller stopple and an existing valve.





- 192.163: Compressor Stations
 - (e) Failure to comply with NFPA 70 (NEC).





- 192.187: Vaults: Sealing, Venting, and Ventilation
 - (b) Inadequate ventilation (eff. 1957).



- 192.475: Internal Corrosion Control
 - (a) Exceedances of 7 lb/MMcf water and 4 ppm H2S in "pipeline quality gas."
 - (b) Failure to take appropriate actions when internal corrosion is found.
- 192.477: Internal Corrosion Monitoring
 - Failure to install coupons or other means of monitoring when internal corrosion is found.

- 192.479: Atmospheric Corrosion Control
 - Failure to coat small fittings.





- 192.481: Monitoring Atmospheric Corrosion
 - (b) Failure to give particular attention to disbonded coatings and pipe supports.



- 192.605(a): O&M Procedures
 - Failure to follow procedures for regulator station inspections (192.739)
 - Sequence.
 - Lockup and set point verification.
 - LOTO requirements.
- 192.617: Failure Investigation
 - Failure to perform/document failure investigation to determine the cause of the failure and minimizing the possibility of a recurrence.
- 192.619(a): MAOP
 - Failure to document significant elevation variations (192.517)
 that would affect the MAOP (unknown deadweight location).
 - Pipeline in class 3 was only tested to 1.4 times MAOP.

- 192.911(k): MOC
 - Inadequate MOC process for small changes:
 - Changing/updating baseline assessment/reassessment plan.
 - Changing to risk ranking.
 - Changing assessment method for HCA's.
- 192.917: TIMP Potential Threats
 - (a) Failure to consider all threats (Equipment).
 - (b) Failure to use data for past incidents, incorrect operations, among others (Table 1, ASME B31.8S).
 - (c) Errors in risk calculations.
- 192.927: ICDA
 - (c)(2) Errors in region identification during assessments.
 - (c)(3) Incorrect number/locations of excavations.

- 192.947: TIMP Records
 - Inadequate documentation for:
 - HCA identification process.
 - PIR calculations.
 - MOC process (small changes).
 - Performance measure evaluation.
 - Changing assessment method for HCA's.
 - More restrictive criteria used.

- 192,1007: Elements of DIMP
 - (a)(3) Failure to collect additional information needed to fill gaps.
 - (a)(5) Failure to capture data on any new pipeline installed.
 - (b) Failure to consider applicable threats:
 - Years without adequate cathodic protection.
 - Cathodic protection below criteria.
 - Internal and external corrosion identified by exposed pipe inspections.
 - Shorted casings.
 - Pre-1940 oxy-acetylene girth welds.

- 192,1007: Elements of DIMP
 - (b) Failure to consider applicable threats:
 - Mechanical couplings
 - Inside meters
 - Leaks pending to be repaired
 - Unknown plastic pipe materials
 - Interacting threats
 - (d) Failure to implement measures to address risk (P&M actions).
 - (e)(1) Failure to develop and monitor performance measures specified in plan.

- 192.1011: DIMP Records
 - Inadequate documentation for:
 - SME analysis and input (192.1007(a),(b), & (c)).
 - Each of the eight threat categories being considered and analyzed for each pipeline segment (192.1007(b)).
 - Risk evaluation process (192.1007(c)).
 - How risk ranking produces main replacement prioritization and schedule (192.1007(d)).



Brian Gauthier

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- Restroom building explodes in a public park.
- Prior to explosion, operator investigated leak call and found no gas.
- After explosion, operator discovers a gas leak on a 6" cast iron main several blocks away from the explosion.
- Gas migrated through the nearby sanitary sewer to the location of the explosion.
- Leak addressed with a repair clamp.
- \$233,398 in damages.



 Vehicle exits the road and strikes an above grade transmission pipeline.

 Escaping gas ignited causing damage to vehicles, gas facilities and operator's buildings.

Two injuries.

540 PSIG MAOP.

1,000 evacuated.

24 MMCF gas lost.

Extensive damages.



Vehicle exits the road and strikes building and above

grade distribution pipeline.

Escaping gas does not ignite.

- Moderate damage to building is only from the vehicle.
- Driver is injured.
- Building is later repaired.
- Gas items are replaced.
- NRC notice's rescinded.

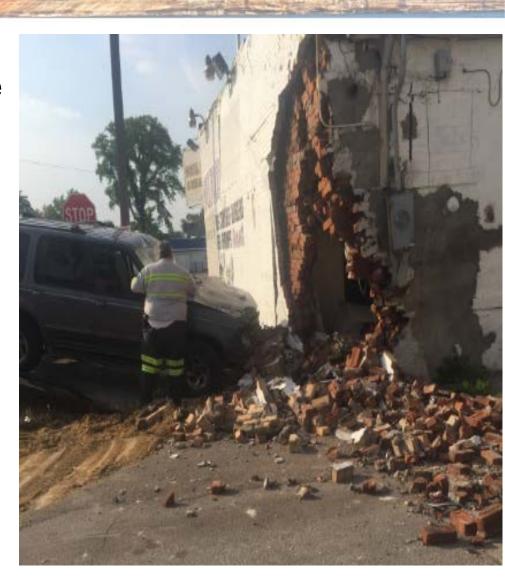




- Explosion and fire destroy apartment unit.
- Family of 2 displaced and with loss of belongings.
- Gas odor had been smelled prior to the incident.
- Entire complex is fed by a central meter.
- LDC is responsible for all underground gas lines.
- Testing indicates that these lines were not leaking.



- Vehicle exits the road and strikes building at an above grade distribution pipeline.
- Escaping gas ignites, causing damage to unused building.
- Driver is injured.
- Building is later demolished.
- Damages total \$80,000



- R 460.20308(d): Customer Meters and Regulators
 - Failure to protect from vehicular damage.
- 192.481(a): Atmospheric Corrosion Control
 - Failure to inspect atmospheric corrosion control measures every 3 years, NTE 39 months, despite access issues.
- 192.616(a): Public Awareness Program
 - Failure to follow the guidance provided in API RP 1162.
- 192.707(a)(1): Line Markers
 - Failure to maintain markers over a transmission line at a public road crossing.





Eleanor Mundorf

Area of Responsibility: Southern Michigan;

OQ; D&A

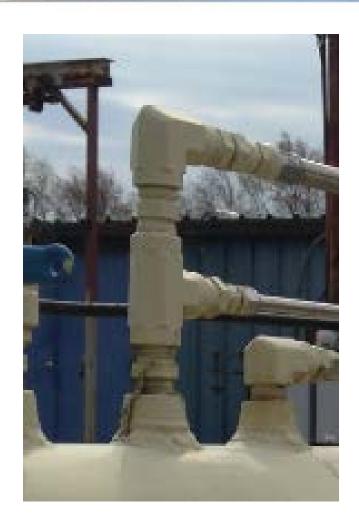
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- Unintentional ESD.
- Repair of a leak at an ESD station on the pilot gas.
 - Crew shut in both the pilot gas and the power gas.
 - Crew bled down the pilot gas.
- System functioned two blow down valves opened.
 - Power gas was exhausted opening the valves. Valves were then manually closed using the manual hydraulic override pumps.
- Suction vented for 2.5 minutes, 620 psig.
- Discharge vented for 9 minutes, 716 psig.
- Gas loss 3.4 MMcf.

- R460.20504 / 191.17(a):
 Failure to file annual report.
- 192.203(b)(9): Sensing control lines of the worker and monitor attached to a single tap.
- 192.481(a): Above grade piping atmospheric corrosion inspection exceeded 39 months due to pipe insulation.
- 192.615(b)(2): Failure to train operating personnel on emergency procedures.



- 192.619(a): Operating a pipeline above MAOP.
- R 460.20202(1): Failure to have a drug and alcohol testing program.
- 192.805(b):
 - Failure to evaluate contractor OQ program.
 - Failure to evaluate contractor employee qualification records.
 - Failure to determine abnormal operating conditions (AOCs) for covered tasks.
 - Failure to evaluate individuals performing covered tasks on AOCs.
- 192.807:
 - Failure to maintain qualification records.
 - Failure to record date of current qualification.
 - Failure to accurately record the qualification method.



Paul Shapter

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- 192.479(b): Atmospheric Corrosion Control
 - Failure to use an operator-approved coating. Coating material must be suitable for the prevention of atmospheric corrosion.
 The coating did not provide for atmospheric corrosion inspection.
- 192.481(c): Monitoring Atmospheric Corrosion
 - Failure to provide protection against corrosion after discovery, causing a vault to be abandoned.



Tim Wolf

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- Vehicle damage to a regulating station feeding 12 customers.
- Icy road conditions.
- No take-off valve.
- 55.2 Mcf lost.
- Total damages: \$41,894.75.



- Third-Party Damage.
- A County Road Commission crew was digging a French drain.
- Staking showed the main on the opposite side of the structure they were working on.
- Total damages: \$12,074.56.



- 191.22: PHMSA Operator ID
 - Failure to acquire a PHMSA OPID.
- 192.161(a)(1): Supports and Anchors
 - Failure to provide enough supports for a heater. The equipment was fully supported by it's own fuel line.





- 192.199(c): Relief/Regulator Design
 - Failure to design a regulator station without the ability to test regulators for lock-up.
- 192.203(b)(9): Control Piping
 - Failure to design/install individual sensing lines for workermonitor regulators. The regulators shared a common control line such that a failure of control line would result in both regulators failing open.
- 192.481(b): Monitoring Atmospheric Corrosion
 - Failure to inspect pipe at supports. Fixed steel supports tackwelded to piping in a vault.

- 192.491(c): Corrosion Records
 - Failure to provide sufficient detail on corrosion records. Operator was recording "yes" or "no" for atmospheric corrosion.
 - Failure to record atmospheric corrosion condition, when "Good."
- 192.605(a): O&M Violations
 - Failure to review an excavator list annually, as required by their O&M.
 - Failure to prepare and follow an O&M.
- 192.614: Damage Prevention Violations
 - (a) Failure to carry out a written Damage Prevention program as required.
 - (b) Failure to participate in a one-call system.

- 192.615: Emergency Plan Violations
 - (b)(1) Failure to provide a copy of Emergency Plan to the appropriate operating personnel.
 - (b)(2) Failure to provide adequate training of appropriate personnel on the Emergency Plan (records).
 - (c) Failure to maintain liaison with appropriate personnel (lack of records).

- 192.616: Public Awareness Violations
 - (c) Failure to adequately perform the effectiveness study.
 - (e) Failure to identify all stakeholder audiences.
 - Consideration of schools, municipalities, and businesses.
 - (g) Failure to show consideration for languages other than English.

• 192.707(a)(1): Line Markers



- 192.739: Pressure limiting devices.
 - (a) Failure to maintain record of relief device inspections from other operators supplying gas to the subject pipeline.
 - (a)(3) Failure to adequately inspect regulators. Not testing for lock-up.
 - (a)(3) Failure to set relief device at correct pressure.



